AMENDMENTS TO THE CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

Listing of Claims:

1 (currently amended). A communication apparatus, comprising:

a ~~propagation environment estimating section that estimates~~ reference signal generating section that generates a first reference signal to enable a communicating party to estimate a propagation environment ~~using a signal transmitted from a communicating party~~ ; ~~and~~

a transmitting section that transmits the first reference signal;

a propagation estimating section that estimates a first propagation estimation value of the propagation environment using a second reference signal transmitted from the communicating party;

a first data acquiring section that ~~acquires~~ generates first data using ~~an estimation value obtained in~~ the first propagation ~~environment estimating section~~ estimation value; and

a decoding section that decodes a transmission signal encoded using a second propagation estimation value that is estimated by the communicating party using the first reference signal, to obtain second data using the first data.

2 (canceled).

3 (currently amended). The communication apparatus according to claim 1, further comprising:

a coding section that encodes the first propagation estimation value obtained in the propagation ~~environment~~ estimating section,

wherein the first data acquiring section ~~acquires~~ generates the first data from an encoding pattern of the encoded first propagation estimation value ~~encoded~~.

4 (currently amended). The communication apparatus according to claim 1, further comprising:

a comparing section that compares the first propagation estimation value obtained for each channel in the propagation estimating section with one another when a plurality of channel signals are received,

wherein, based on a comparison result in the comparing section, the first data acquiring section generates ~~acquires~~ the first data.

5 (currently amended). The communication apparatus according to claim 1, further comprising:

a storing section that stores a known ~~reference~~ signal known between the apparatus and the communicating party,

wherein the propagation ~~environment~~ estimating section obtains [[the]] correlation of the known ~~reference~~ signal and the second reference signal and generates a delay profile as the first propagation estimation value, and the first data acquiring section uses a reference table that associates the delay profile with the first data, [[and]] reads out

the first data associated with the delay profile generated in the propagation ~~environment~~ estimating section from the reference table and thereby generates ~~to acquire~~ the first data.

6 (currently amended). The communication apparatus according to claim 5, wherein the first data acquiring section calculates [[the]] convolution of [[the]] auto-correlation ~~function of~~ between the known ~~reference~~ signal and the second reference signal, and a quantization vector stored in the reference table, [[and]] performs metric calculation using the delay profile and the quantization vector subjected to the convolution, ~~and thereby~~ selects a vector code, and thereby generates ~~to acquire~~ the first data.

7 (currently amended). The communication apparatus according to claim 5, wherein the first data acquiring section performs orthogonal conversion on the delay profile generated in the propagation ~~environment~~ estimating section to condense signal components, and ~~acquires~~ generates the first data using the signal components.

8 (currently amended). The communication apparatus according to claim 1, further comprising:

an equalizing section that performs equalizing on a received signal based on the first propagation estimation value obtained in the propagation ~~environment~~ estimating section to acquire the second data.

9 (currently amended). A communication system, comprising:

a first communication apparatus ~~comprising~~: and

a second communication apparatus that is a communicating party of the first communication apparatus, wherein said first communication apparatus comprises:

a first reference signal generating section that generates a first reference signal;

a transmitting section that transmits the first reference signal;

a first propagation ~~environment control~~ estimating section that estimates ~~controls~~ a first propagation estimation value of a propagation environment using a second reference ~~in transmitting a~~ signal transmitted from the second communication apparatus; [[and]]

a first acquiring section that generates first data using the first propagation estimation value; and

~~a transmitting section that transmits the signal in the propagation environment controlled in the propagation environment control section, and~~

a decoding section that decodes an encoded signal transmitted from the second communication apparatus to obtain second data using the first data; and

the [[a]] second communication apparatus comprising:

a second reference signal generating section that generates the second reference signal;

a [[first]] second propagation estimating section that estimates a second propagation estimation value of the ~~which receives the signal transmitted from the first communication apparatus, and estimates a~~ propagation environment using the received first reference signal; [[and]]

a second ~~first data~~ acquiring section that generates third ~~acquires first~~ data using ~~an estimation value obtained in the first~~ the second propagation ~~environment estimating section~~ estimation value; and

a coding section that encodes the second data and generates the encoded signal using the third data.

10-12 (canceled).

11 (canceled).

13 (new). A communication method, comprising:

generating, in a first communication apparatus, a first reference signal to enable a second communication apparatus to estimate a propagation environment between the first communication apparatus and the second communication apparatus;

transmitting the first reference signal from the first communication apparatus to the second communication apparatus;

estimating, in the second communication apparatus, a first propagation estimation value of the propagation environment using the first reference signal;

generating, in the second communication apparatus, first data using the first propagation estimation value;

encoding second data and generating an encoded signal using the first data in the second communication apparatus;

estimating, in the first communication apparatus, a second propagation estimation value of the propagation environment using a second reference signal transmitted from the second communication apparatus;

generating third data using the second propagation estimation value; and

decoding the encoded signal transmitted from the second communication apparatus and acquiring the second data, using the third data.